

1 **COMBINED IN-CIRCUIT EMULATOR AND PROGRAMMER**

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3 **ABSTRACT OF THE DISCLOSURE**

4 A watchdog timer control using a gatekeeper in an In-Circuit Emulation
5 system. The In-Circuit Emulation system has a microcontroller operating in lock-
6 step synchronization with a virtual microcontroller. When a watchdog event occurs,
7 the gatekeeper, forming a part of the virtual microcontroller, crowbars the reset line
8 of the virtual microcontroller as well as the real microcontroller. This freezes the
9 state of the virtual microcontroller so that debug operations can be carried out. The
10 gatekeeper operates with its own gatekeeper clock independent of the
11 microcontroller clock. When a watchdog event occurs, the gatekeeper clock is
12 rerouted to the virtual microcontroller to facilitate debug operations of the virtual
13 microcontroller.
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